Lesson # 33 ~ Area of a Disc

Area formula discovery?

- The formula for calculating the area of a disc from the radius is:

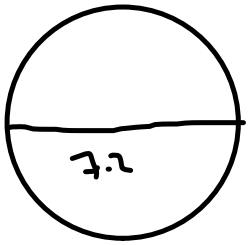
$$A = \pi r^2$$

Find the area, if the radius is 4cm. ***** don't forget BEDMAS

$A = \pi r^2$
$= 3.14(4)^2$ ← exponent first
$= 3.14(16) = 50.24\ cm^2$

$\pi 4^2$
$\pi 16 = 50.27$

Find the area, if the diameter is 7.2cm.



$A = \pi r^2$
$= 3.14(3.6^2)$
$= 3.14(12.96)$
$= 40.69\ cm^2$

$d = 7.2$ $r = \frac{7.2}{2} = 3.6cm$

$(3.6^2) = (3.6)^2$

In order to find the radius from the area do …….. $\sqrt{r^2} = r$

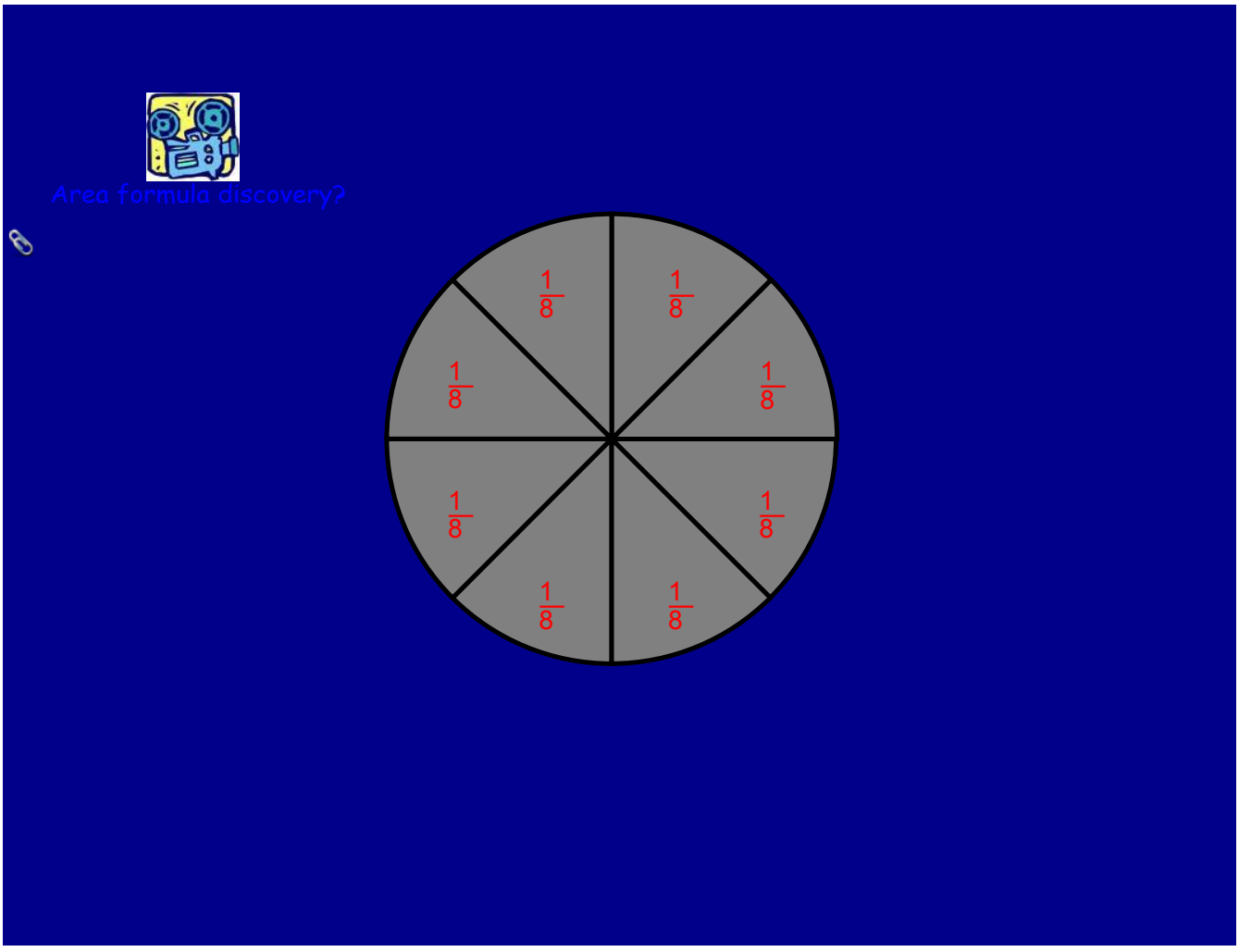
$\frac{A}{\pi} = \frac{\pi r^2}{\pi}$ $\sqrt{\frac{A}{\pi}} = \sqrt{r^2}$ $\Rightarrow$ $\sqrt{\frac{A}{\pi}} = r$

Find the radius if the area is 113.04cm².

$A = \pi r^2$
$113.04 = \pi r^2$
$\frac{113.04}{3.14} = \frac{3.14 r^2}{3.14}$
$\sqrt{36} = \sqrt{r^2}$
$6 = r$

or

$\sqrt{\frac{113.04}{3.14}} = r$
$\sqrt{36} = r$
$6 = r$


Area formula discovery?
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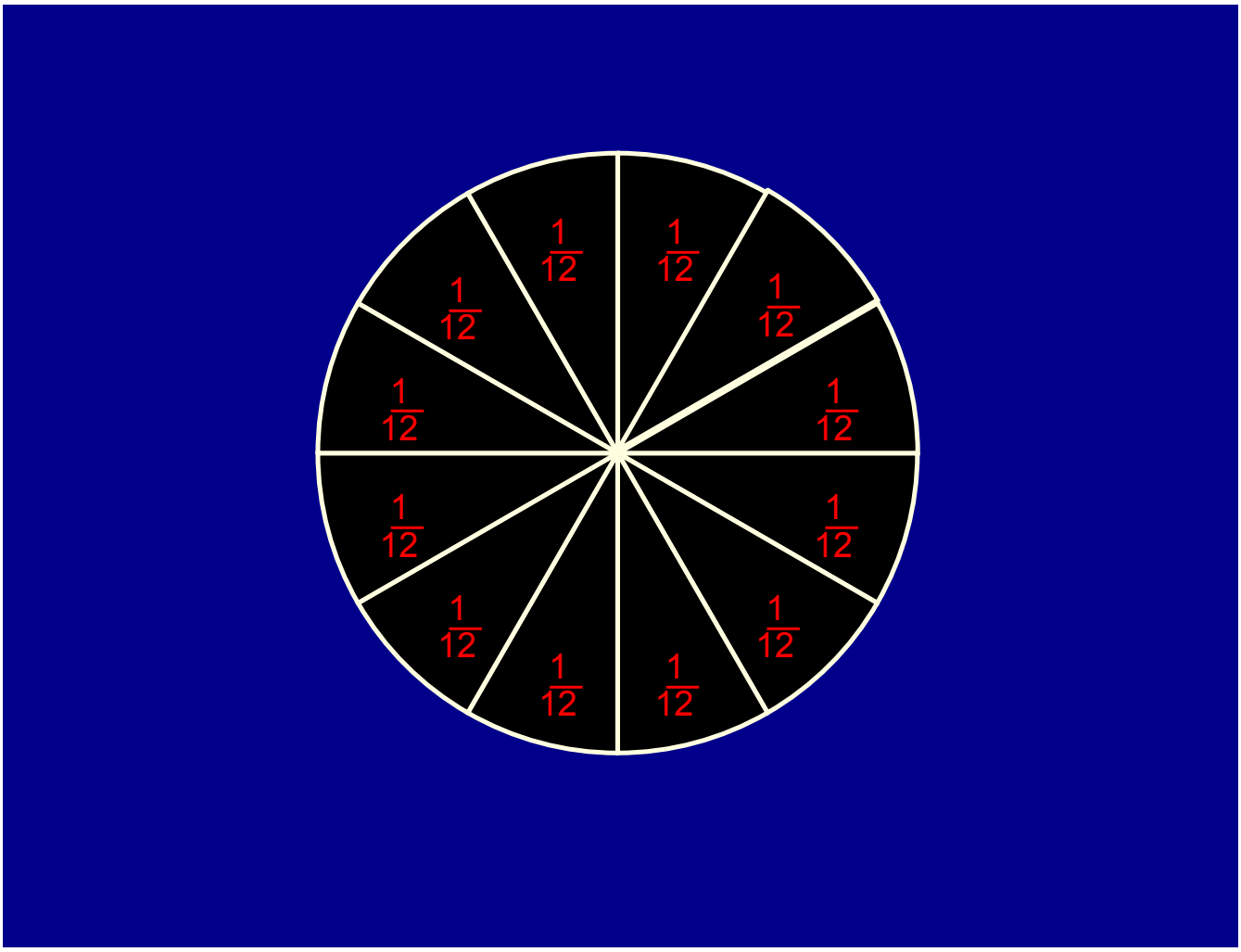
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QUIZ: Ceramic Tile Tabletop (1.33) **Name:** _____

A local craftsman is making a circular tabletop that is going to be covered with square ceramic tiles measuring 1 cm^2 each. Five thousand tiles will be used to cover the entire table.

The craftsman would like to make a strip of tiles from one edge of the table to the other, passing through the center point. This strip will be in white ceramic tiles, while the rest of the table will be in black tiles.

How many white tiles will be needed to make this strip?

A table handmade in Marrakesh, Morocco. The craftsman is making a table similar to this one.

C2: Reasoning	5	4	3	2	1
cr3: Reasoning					
cr2: Concepts					
cr4: Organization cr5: Justification					

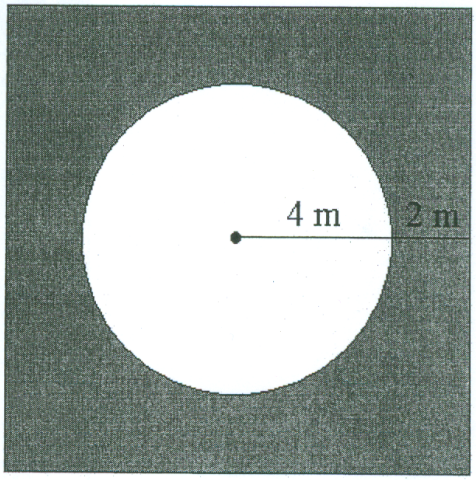
L.33

QUIZ: The Pond & Slate

Name: _____

The Lepage family is installing a decorative pond in their yard. The pond will be circular and centered in a square section of slate stones.

The Lepages want to know how much money they should budget for the slate stone. If the slate costs $17.01 per square metre, how much will they be spending?



C2: Reasoning	5	4	3	2	1
cr3: Reasoning					
cr2: Concepts					
cr4: Organization cr5: Justification cr1: Conjecture					

WORKSHEET 18

PASSPORT 8

Ripples in the Water!

1. Use your compasses to **construct** a circle with:

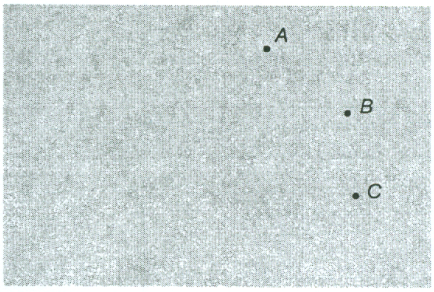
   a) a radius of 2 cm; ***b)*** a diameter of 5 cm;

   c) a circumference of approximately 6.28 cm; ***d)*** an area of approximately 28 cm^2.

2. Three cottages, *A*,*B* and *C*, are built at a summer camp.

   a) **Find** the exact location where a lamppost must be installed to give the same intensity of light on all three cottages.

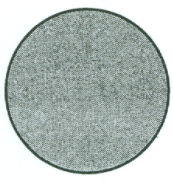
   b) **Give** the geometric statement used to solve this problem.



3. Use your ruler to find the necessary measurements and **calculate** (showing the steps of your work):

   a) the perimeter of the circle at right;

   b) the area of the disc.



Homework

Act. Book

P. 66

$A = \pi r^2$

Attachments

Area of Circle.asf